

### **AMENDMENTS TO THE CLAIMS**

Please cancel claims 5, 6, 20-22, 24, and 37-67 without prejudice. Please add new claims 68 and 69. All pending claims are presented in the following claim listing pursuant to 37 C.F.R. § 1.121(c). Added text is underlined, and deleted text is shown by strike-through or by double brackets where strike-through cannot be easily perceived

#### **Listing of Claims:**

1. (currently amended) A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract by applying a current-controlled electrical pulse to the neuromuscular tissue, comprising:  
a voltage sensor to detect a voltage across the neuromuscular tissue being stimulated; and  
circuitry configured to (a) compare the voltage with a predetermined voltage threshold and to adjust the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold, such that the voltage does not exceed the predetermined voltage threshold, (b) calculate electrode resistance, said electrode resistance being voltage limit value divided by current value, and (c) determine an increment of adjustment of voltage based on the electrode resistance.
2. (original) The neuromuscular stimulator defined in claim 1, wherein the voltage threshold is adjustable.
3. (original) The neuromuscular stimulator defined in claim 1, wherein the circuitry is configured to set the voltage threshold based on a current level associated with the current-controlled pulse.
4. (original) The neuromuscular stimulator defined in claim 3, wherein the circuitry is configured to prepare a set of voltage thresholds and associated respective current levels.

5.-6. cancelled.

7. (currently amended) The neuromuscular stimulator defined in claim [[5]] 1, wherein the circuitry is configured to associate the electrode resistance with the current level of the current-controlled pulse.

8. (original) The neuromuscular stimulator defined in claim 7, further comprising:

a memory device to store the electrode resistance and the associated current level.

9. (currently amended) The neuromuscular stimulator defined in claim [[5]] 1, further comprising:

a display device to display the electrode resistance and the associated current level.

10. (currently amended) ~~The neuromuscular stimulator defined in claim 1, wherein the circuitry is configured to~~ A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract by applying a current-controlled electrical pulse to the neuromuscular tissue, comprising:

a voltage sensor to detect a voltage across the neuromuscular tissue being stimulated; and

circuitry configured to (a) compare the voltage with a predetermined voltage threshold and to adjust the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold, such that the voltage does not exceed the predetermined voltage threshold, and (b) calculate capacitance of said tissue, said capacitance being the ratio of the current and the time rate of change of the voltage during an individual electrical stimulating pulse.

11. (original) The neuromuscular stimulator defined in claim 10, wherein the circuitry is configured to determine the increment of adjustment based on the capacitance.

12. (original) The neuromuscular stimulator defined in claim 10, wherein the circuitry is configured to associate the capacitance with the current level of the current-controlled pulse.

13. (original) The neuromuscular stimulator defined in claim 10, further comprising:  
a memory device to store the capacitance and the associated current level.

14. (original) The neuromuscular stimulator defined in claim 10, further comprising:  
a display device to display the capacitance and the associated current level.

15. (original) The neuromuscular stimulator defined in claim 1, further comprising:  
a memory device to store an event characterized by the voltage being found to meet the predetermined voltage threshold.

16. (currently amended) ~~The neuromuscular stimulator defined in claim 1,~~  
A neuromuscular stimulator for stimulating tissue of the gastrointestinal tract by  
applying a current-controlled electrical pulse to the neuromuscular tissue,  
comprising:  
a voltage sensor to detect a voltage across the neuromuscular tissue being  
stimulated; and  
circuitry configured to compare the voltage with a predetermined voltage  
threshold and to adjust the current-controlled pulse if the voltage is found to meet

the predetermined voltage threshold, such that the voltage does not exceed the predetermined voltage threshold.

wherein the neuromuscular stimulator is configured to determine and store a time value during the electrical pulse when the voltage associated with the electrical pulse meets the predetermined voltage threshold.

17. (original) The neuromuscular stimulator defined in claim 1, wherein the voltage sensor is configured to detect the voltage across the neuromuscular tissue at a leading edge of the electrical pulse.

18. (original) The neuromuscular stimulator defined in claim 1, wherein the voltage sensor is configured to detect the voltage across the neuromuscular tissue at a trailing edge of the electrical pulse.

19. (currently amended) A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:

(a) preparing a set of voltage thresholds and associated respective current levels comprising:

setting a test value for the voltage threshold;

applying a first current pulse to the tissue to be stimulated;

iteratively varying the test value until the voltage level across the tissue is found to meet the test value; and

associating the voltage level with the respective current level in the set of voltage thresholds;

(b) applying a current-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;

(c) detecting a voltage across the neuromuscular tissue being stimulated;  
setting the voltage threshold based on a current level associated with the current-controlled pulse;

(d) comparing the voltage with a predetermined voltage threshold; and

(e) adjusting the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold by the detecting, such that the voltage does not exceed the predetermined voltage threshold.

20.-22. cancelled.

23. (currently amended) The method defined in claim ~~[[22]]~~ 19, wherein preparing the set of voltage thresholds further comprises:

before the step of associating, multiplying the measured voltage level by a factor selected from a range between about 1.0 and 1.5.

24. cancelled.

25. (currently amended) ~~The method defined in claim 24;~~ A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:

(a) applying a current-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;

(b) calculating electrode resistance, said electrode resistance being voltage limit value divided by current value;

(c) detecting a voltage across the neuromuscular tissue being stimulated;

(d) comparing the voltage with a predetermined voltage threshold; and

(e) adjusting the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold by the detecting, such that the voltage does not exceed the predetermined voltage threshold, wherein the step of adjusting the current-controlled pulse further comprises ~~[[:]]~~ determining an increment of adjustment of voltage based on the electrode resistance.

26. (currently amended) The method defined in claim ~~[[24]]~~ 25, further comprising:

after calculating the electrode resistance, associating the electrode resistance with the current level of the current-controlled pulse.

27. (original) The method defined in claim 26, further comprising:

after the step of associating the electrode resistance with the current level of the current-controlled pulse, storing the electrode resistance and the associated current level in a database.

28. (currently amended) The method defined in claim ~~[[24]]~~ 25, further comprising:

after the step of associating the electrode resistance with the current level of the current-controlled pulse, displaying the electrode resistance and the associated current level.

29. (currently amended) ~~The method defined in claim 19, further comprising:~~

~~after the step of applying a current-controlled pulse to the neuromuscular tissue;~~ A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:

(a) applying a current-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;

(b) calculating capacitance of said tissue, said capacitance being the ratio of the current and the time rate of change of the voltage ;

(c) detecting a voltage across the neuromuscular tissue being stimulated;

(d) comparing the voltage with a predetermined voltage threshold; and

(e) adjusting the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold by the detecting, such that the voltage does not exceed the predetermined voltage threshold.

30. (original) The method defined in claim 29, wherein the step of adjusting the current-controlled pulse further comprises:  
determining the increment of adjustment based on the capacitance.
31. (original) The method defined in claim 29, further comprising:  
after the step of calculating the capacitance, associating the capacitance with the current level of the current-controlled pulse.
32. (original) The method defined in claim 29, further comprising:  
after the step of associating the capacitance with the current level of the current-controlled pulse, storing the capacitance and the associated current level in a database.
33. (original) The method defined in claim 29, further comprising:  
after the step of associating the capacitance with the current level of the current-controlled pulse, displaying the capacitance and the associated current level.
34. (currently amended)~~The method defined in claim 19, further comprising:~~ A method of stimulating neuromuscular tissue of the gastrointestinal tract comprising:  
(a) applying a current-controlled electrical pulse to the neuromuscular tissue to stimulate the neuromuscular tissue;  
(b) detecting a voltage across the neuromuscular tissue being stimulated;  
(c) comparing the voltage with a predetermined voltage threshold;  
(d) storing an event in memory characterized by the voltage being found to exceed the predetermined voltage threshold; and  
(e) adjusting the current-controlled pulse if the voltage is found to meet the predetermined voltage threshold by the detecting, such that the voltage does not exceed the predetermined voltage threshold.

35. (original) The method defined in claim 19, wherein the detecting a voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a leading edge of the electrical pulse.

36. (original) The method defined in claim 19, wherein the detecting the voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a trailing edge of the electrical pulse.

37.-67. cancelled.

68. (new) The method defined in claim 29, wherein the detecting a voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a leading edge of the electrical pulse.

69. (new) The method defined in claim 29, wherein the detecting the voltage across the neuromuscular tissue being stimulated comprises detecting the voltage at a trailing edge of the electrical pulse.